

REMARKS

In the Office Action dated July 2, 2003, the Examiner rejected claims 1-5 under 35 U.S.C. §112, 2nd paragraph; rejected claim 5 under 35 U.S.C. §102(b) as anticipated by, or in the alternative, under 35 U.S.C. §103(a) as obvious over the Abstract to the article entitled "Interaction of Manganese-Copper Solid Solutions with Nitrogen in the Range of 760-860°C" by Liu et al.; and rejected claim 5 under 35 U.S.C. §112, 5th paragraph as "constituting a multiple dependent claim which fails to depend from the parent claims in the alternative only."

By this Amendment, Applicants have amended claims 1-5 to correct the minor informalities identified by the Examiner. Accordingly, the Section 112, 2nd paragraph rejection of claims 1-5 is moot and should be withdrawn.

Applicants respectfully traverse the rejection of claim 5 under 35 U.S.C. §102(b) as anticipated by, or in the alternative, under 35 U.S.C. §103(a) as obvious over the Abstract to the article entitled "Interaction of Manganese-Copper Solid Solutions with Nitrogen in the Range of 760-860°C" by Liu et al. for at least the reason that Liu et al. fails to disclose or suggest every claim element. For example, claim 5 includes a manganese-based nitride of the formula CuNMn_3 having a temperature coefficient of resistivity of 40-50 ppm/K and a cubic antiperovskite structure. Liu et al. fails to disclose or suggest a material of the formula CuNMn_3 having the claimed temperature coefficient of resistivity of 40-50 ppm/K and a cubic antiperovskite structure. In fact, Liu et al. is completely silent regarding whether any material formed by its disclosed process has an antiperovskite structure or the claimed temperature coefficient of resistivity.

The Examiner has properly recognized the absence of these features from the disclosure of Liu et al. The Examiner has contended, however, that the nitride material

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of Liu et al. "would inherently have a temperature coefficient of resistivity of 40 to 50 ppm/K and a cubic antiperovskite structure." The only support that the Examiner has set forth for this contention is the baseless statement that "these are inherent characteristics of [the Liu et al.] nitride." Such a statement is insufficient for supporting a rejection based on inherency.

Particularly, "the fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic." (M.P.E.P. § 2112, ¶ 4.) In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art. (M.P.E.P. § 2112, ¶ 5.) Here, the Examiner has failed to demonstrate that the claimed properties of a temperature coefficient of resistivity of 40 to 50 ppm/K and a cubic antiperovskite structure would necessarily be present in the nitride material of Liu et al.

A comparison of Liu et al. with the material disclosed in the present application actually supports a conclusion that the claimed characteristics of a temperature coefficient of resistivity of 40 to 50 ppm/K and a cubic antiperovskite structure would not necessarily be present in the material disclosed by Liu et al. For example, the present application describes several particular processing conditions (e.g., temperature range, the use of an Mn_2N precursor, and sintering time) that affect whether or not a nitride material having an antiperovskite structure is produced (pp. 3 and 4). Outside of the particular processing conditions described, in fact, the application makes clear that the antiperovskite structure is not formed. Liu et al. fails to identify any of the same

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processing conditions as the present application. Liu et al. certainly fails to identify any of the same processing conditions as described in the application that lead to a material having an antiperovskite structure. Therefore, one cannot properly conclude that the nitride material of Liu et al. necessarily includes either an antiperovskite structure or a temperature coefficient of resistivity of 40 to 50 ppm/K.

In addition to the theory of inherency, the Examiner has also attempted to support the Section 102(b) and/or Section 103(a) rejection of claim 5 by maintaining that "it would be prima facie obvious to carry out the nitriding step of Liu et al. under conditions that would result in the ... nitride having [a temperature coefficient of resistivity of 40 to 50 ppm/K and an antiperovskite structure], since one of ordinary skill in the art would be motivated to provide such properties in the ... nitride." This statement, however, does not satisfy the requirements for establishing a *prima facie* case of obviousness. Specifically, the Examiner has failed to demonstrate that a teaching or suggestion to make the claimed invention and a reasonable expectation of success for achieving the properties of the claimed invention are *both found in the prior art*, as required by M.P.E.P. § 2142. Liu et al., for example, fails to even disclose or suggest a material with a cubic antiperovskite structure leading to the claimed temperature coefficient of resistivity. With no mention of these characteristics, Liu et al. would have provided no motivation or reasonable expectation of success to one of ordinary skill in the art to make a material having the properties of the claimed invention. Accordingly, no *prima facie* case of obviousness has been established with respect to claim 5.

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Because, Liu et al. fails to disclose or suggest every element of claim 5, and because no supported evidence has been set forth demonstrating that the claimed features are *necessarily* found in the material of Liu et al., or that one of ordinary skill in the art would have been motivated to make or perform the claimed invention, the Section 102(b) and/or Section (103(a) rejection of claim 5 is improper and should be withdrawn.

Applicants also respectfully traverse the Section 112, 5th paragraph rejection of claim 5. While claim 5, as originally written, was in proper multi-dependent format according to M.P.E.P. § 608.01(n)(I)(A), claim 5 has been rewritten in independent form. Accordingly, the Section 112, 5th paragraph rejection of claim 5 is moot and should be withdrawn.

Applicants respectfully submit that claims 1-5 are in condition for allowance. Applicants also submit that new claims 6-9 are in condition for allowance in view of at least their dependency on independent claim 1 (i.e., claims 6 and 7) and/or their additional recitations of novel features.

In view of the foregoing, Applicants respectfully request reconsideration and reexamination of this application and timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

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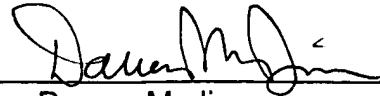
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Respectfully submitted,

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By: _____



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